USER
MANUAL

GRIPABLE
PRO

THERAPEUTIC GUIDE TO THE DEVICE

GripAble is an assessment and treatment instrument for people with upper limb needs. It is intended for use by people with a wide variety of clinical presentations and aims to:

- provide assessment of grip and release
- provide assessment of wrist and forearm movements
- optimise dose and intensity of upper limb training
- provide real time feedback during use
- track and monitor all training

GripAble is an adjunct to other instruments and rehabilitation modalities and can be used in many different clinical and community settings. The therapist will need to use clinical reasoning for each user and apply the instrument appropriately. The therapist is responsible for the assessments and treatment prescription selected.

For home use, it is recommended that the user consults an occupational therapist or physiotherapist, who can assess the suitability of GripAble as part of their home rehabilitation programme, set goals and advise on the appropriate activities for the individual.

CONTENTS

WHAT DOES GRIPABLE DO?

GripAble enables the therapist to set up users (patients/clients) with a unique log in, assess their ability in grip/release and movement to set a baseline, set treatment goals and review progress. GripAble is also able to assess various aspects of grip strength in a separate part of the App. See later in this document for more details on how to set up a new user, use the grip tests and other functionalities.

ASSESSMENT

GripAble assesses:

- Grip strength
- Release of grip
- Wrist extension and flexion
- Wrist radial and ulnar deviation
- Pronation and supination

The assessment of strength is sensitive to 0.1 Kg and is therefore able to detect flickers of movement. The minimum and maximum strengths recordable are 0.3 Kg to 90 Kg.

Assessment of ability to release is valuable for neurological disorders. GripAble gives an objective assessment of the ability to actively release, even at low strength levels. This is represented as a percentage of total release.

TRAINING

The therapist can use GripAble to address training goals as appropriate including to:

- gain control of grip and release
- strengthen forearm and hand muscles
- improve concentration
- improve coordination
- improve intentional release of grip
- strengthen pinch grips
- encourage movements of the wrist and forearm
- encourage grip and pinch strength endurance
- provide motivating and engaging activities

GripAble is developing fast and therefore software upgrades will be regularly applied to the GripAble App. Awareness of the updates and training will be provided for therapists both online on the GripAble website and via newsletters. Should you need any further help, please contact the customer team.

UPDATING SOFTWARE

Occasionally your tablet will tell you it needs an update. Follow the instructions to update at the time or schedule an update at a later time. The GripAble software will also be updated regularly providing further functionality.

You will need a Google account to update the GripAble app, as all updates are delivered through Google Play (also called Google Play Store). When new updates are available the GripAble app will notify you within the app and take you to create a Google account if you are yet to do so. The following screens will appear:
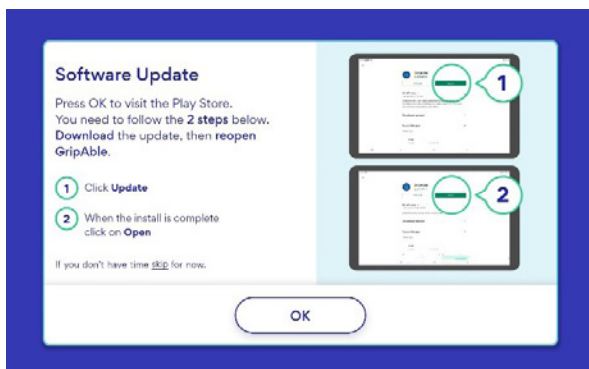
Follow the instructions. By pressing "OK" you will be taken automatically to the Play Store.
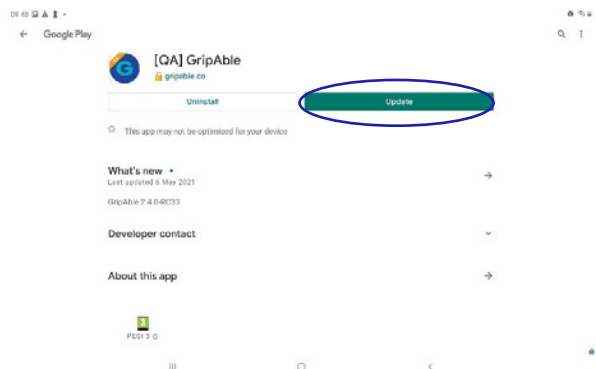
Click "Update"

When the update has completed:
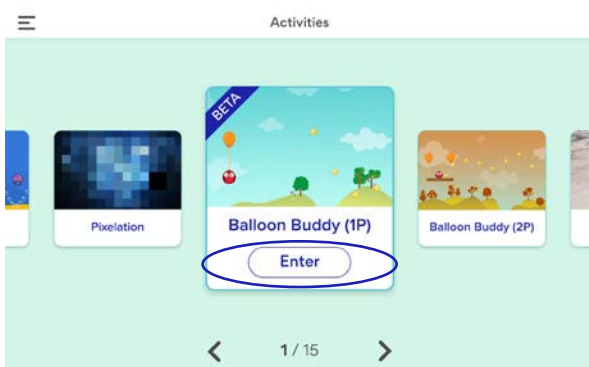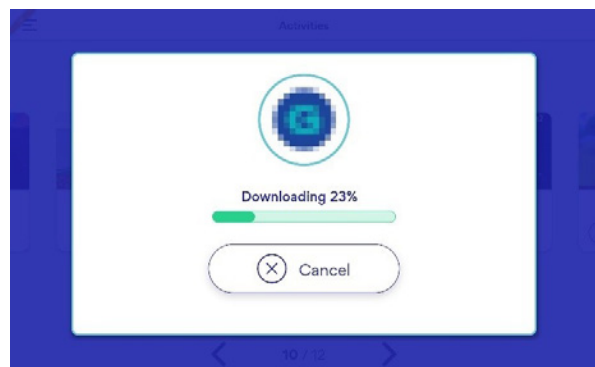
Click "Open"

Now when you enter the activity carousel, all those activities which need to be installed or updated will be indicated. Click on each one and follow the instructions as follows:
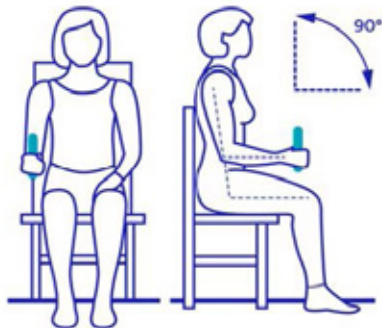

Install activity.

Activity being updated. If you already have the activity but there is an update you will see "update required". The update will need to be applied before play can commence.

POSITIONING DURING USE

For all use, the recommended user position is seated in an upright posture with the shoulder adducted, elbow at 90 degrees, forearm horizontal to the ground and unsupported as shown here.

In some clinical situations this will not be possible. The therapist will need to adapt to the physical capacity of the user. For example, in the presence of altered tone, the arm may need to be supported and/or resting in the lap. For users with specific movement disorders, GripAble may need to be placed on a table. It is for the therapist to design and advise advantageous treatment positions. Place the black wrist lanyard around the wrist to prevent accidental dropping of GripAble.

Grip and release activities are designed with the GripAble placed in the hand with the forearm in mid pro/supination (with the thumb uppermost).

Wrist flexion/extension activities are designed with the GripAble placed in the hand with the forearm in full pronation (palm down). Where possible, the starting position is in neutral.

Wrist radial/ulnar deviation activities are designed with the GripAble placed in the hand with the forearm in mid pro/supination (thumb uppermost). Where possible, the starting position is in neutral.

Supination/pronation activities are designed to have the GripAble in the hand with the forearm starting in mid pro/supination (thumb uppermost) and move into further pronation and supination range from this position.

STRAPPING
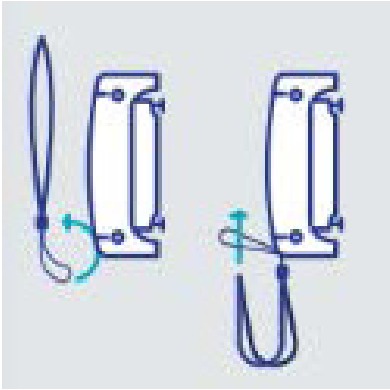
GripAble is supplied with one black lanyard strap which fixes to the base of the device. This should be placed around the wrist during use to prevent accidental dropping.

GripAble is also supplied with several white silicone straps. These are intended for use with users who need extra help to retain a hold of GripAble. They have multiple holes along their length and three hooks / attachment points each end of GripAble to enable the therapist to design the best position for the straps for each individual user. Some examples are shown below:

The straps have a small element of stretch in them to aid fixation but it is important that the straps are not fixed too tight. Consider the route of the superficial branch of the radial nerve and be sure not to compress in this area. Wherever possible, use the hooks that are on the main body of GripAble rather than the two on the moveable fingerplate. If the latter hooks are needed, GripAble should be used in the isometric mode (see below).

LOCKED AND UNLOCKED MODE

UNLOCK MODE:

The fingerplate moves as GripAble is squeezed and provides a small amount of resistance.

LOCK MODE:

The fingerplate does not move when GripAble is squeezed. Locked mode is to allow GripAble to be used isometrically (similar to a hand dynamometer).

- To lock: Squeeze GripAble and press the locking button completely in.

- To unlock: Squeeze GripAble and press the locking button completely in, let go, and the button will pop back out to be flush with the top of the device.

Should you be in locked mode at a time when it is not usually used, the GripAble software will give you a warning that it is in locked mode.

SELECTING MEASUREMENT UNITS

You can choose to measure in either pounds or kilograms. To set your preferred unit of measurement, go to the Support menu in the app, choose Measurement Units and click kilograms or pounds. This will change the unit of measurement for all users. You can change this as many times as you wish.

GRIPABLE REHABILITATION GOAL SETTING AND TRACKING

The therapist can select grip and release repetitions and/or wrist and forearm movements and set daily targets for each. The target can be number of repetitions of the desired action or number of minutes spent training a specific action.

After each level on each activity, a summary of the repetitions performed, and minutes trained that day will be displayed with the number that were added during that level of that activity as a "+". See below.

① Grip/release added during the level just completed

② Daily repetitions of grip/release

③ Minutes added during the level just completed

④ Daily minutes of grip/release

On the Level menu you will see one, two or three stars. This represents how well the user has performed at the activity.

Advise your user which activities are the best to meet their goals.

REPETITION CALCULATIONS:

Grip and release:
All squeezes and releases performed during the day will be recorded by the software and a cumulative score achieved. Each squeeze and release sequence is one repetition. This can be benchmarked against a daily goal set by the therapist.

Wrist flexion/extension:
Each cycle of movement from neutral to wrist flexion through to wrist extension and back to neutral (or vice versa) will count as one. Each full cycle performed during the day will be recorded by the software and a cumulative score achieved. This can be benchmarked against a daily goal set by the therapist for movement of the wrist in this plane.

Wrist radial/ulnar deviation:
Each cycle of movement from neutral to wrist radial deviation through to wrist ulnar deviation and back to neutral (or vice versa) will count as one. Each full cycle performed during the day will be recorded by the software and a cumulative score achieved. This can be benchmarked against a daily goal set by the therapist for movement of the wrist in this plane.

Pronation/supination:
Each cycle of movement from neutral to pronation through to supination and back to neutral (vice versa) will count as one. Each full revolution performed during the day will be recorded by the software and a cumulative score achieved. This can be benchmarked against a daily goal set by the therapist for movement of the wrist in this plane. Neutral (mid pro- supination) is the starting position. Neutral is the starting position.

TIME CALCULATIONS:

The GripAble software will record all time spent on each specific movement each day in minutes. Total time spent will be shown between each level of each activity. Detail can be tracked in "Achievements" (see below).

TRACKING AND MONITORING TRAINING:

Considerable data is available for review of training by looking under "Achievements" on the menu bar as listed below.

CLEANING THE DEVICE:

Any alcohol-based wipe can be used to clean the device. The antiseptic products in the wipe will not affect the device. Alternatively, use soap on a damp piece of dressing gauze / J-cloth or equivalent. The device is splash proof but not waterproof. Do not immerse in water.

CALIBRATING THE DEVICE:

You can calibrate your device whenever you wish. This ensures it remains accurate and stable. Watch this 20 second video to find out more.

See:

•Mutaib et al (2022) Modernising grip dynamometry: Inter-instrument reliability between
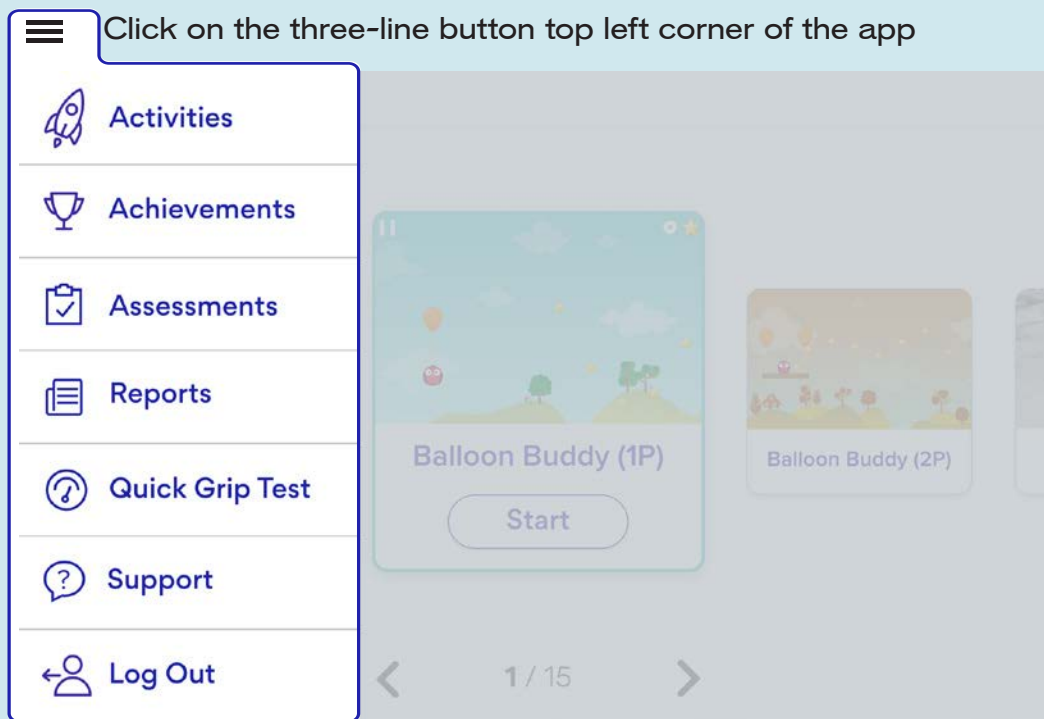
GripAble and Jamar. BMC Musculoskeletal Disorders 23:1, 23(1), 1-10

•Mace et al (2022) GripAble: an accurate, sensitive and robust digital device for measuring grip strength. J Rehabil Assist Technol Eng.

PRECAUTIONS:

If you have epilepsy, vestibular or visual changes please discuss with a clinician, prior to use, to assess your suitability to use any of the activities as the activity might initiate symptoms. The only 3D moving activity is Plume.

MAIN MENU —
APP NAVIGATION

Click on the three-line button top left corner of the app

- Activities
- Achievements
- Assessments
- Reports
- Quick Grip Test
- Support
- Log Out

Balloon Buddy (1P)

Start

Balloon Buddy (2P)

⟨   1 / 15   ⟩

Activities

To access the activities carousel. See separate appendix for a summary of each activity.

Achievements

To review daily progress. Data is available on eight screens:

① **Daily overview** minutes trained, repetitions completed and total work accumulated.

② **Minutes** spent on each activity.

③ **Minutes trained today** and comparison to daily goal.
   a. Goals can be set and reset here.

④ **Repetitions trained today** and comparison to daily goal.
   a. Goals can be set and reset here.

MAIN MENU —
APP NAVIGATION

⑤ **Grip and Release trained today** and comparison to daily goal.

    a. History of grip and release activities over 7, 30, 60 and 90 days can be tracked here

    b. History can be tracked with and without the goal line included.

⑥ **Pronation / Supination trained today** and comparison to daily goal.

    a. History of pronation / supination activities over 7, 30, 60 and 90 days can be tracked here

    b. History can be tracked with and without the goal line included.

⑦ **Wrist Radial/Ulnar Deviation trained today** and comparison to daily goal.

    a. History of wrist radial / ulnar deviation activities over 7, 30, 60 and 90 days can be tracked here

    b. History can be tracked with and without the goal line included.

⑧ **Wrist Extension/Flexion trained today** and comparison to daily goal.

    a. History of wrist extension / flexion activities over 7, 30, 60 and 90 days can be tracked here

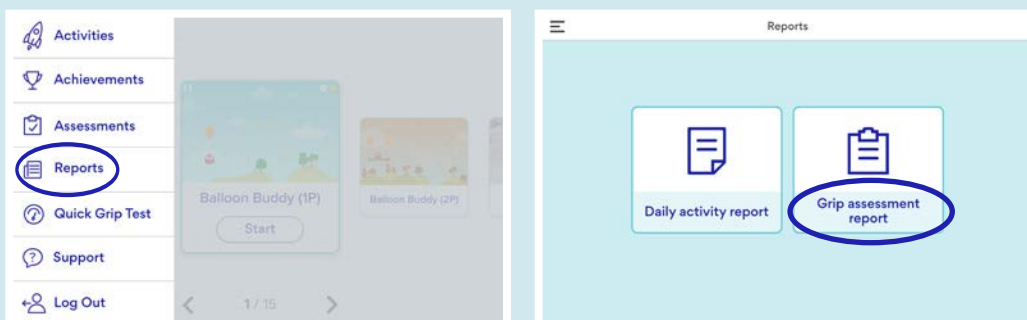   b. History can be tracked with and without the goal line included

Assessment

For review and reassessment of grip strength and release and all movements used as calibration for the activities.

On this screen you can also change the Reminder Period.

Reports

Select between two reports:

MAIN MENU —
APP NAVIGATION

① Daily Activity ReportGripAble Device: This leads to a menu

a. Select the date you wish to see (those when training occurred will be highlighted)

b. Report will include results from calibration assessments, overview of training, minutes and repetitions for each motion and which activities were used. If you have done the Single Maximum Grip Test on that day, this result will also carry through.

c. This report can be emailed to any account you choose

② Grip Tests Report

a. Select the date you wish to see (those when assessment occurred will be highlighted)

b. Results from all the grip tests completed on that day will be listed including all the parameters you chose for the test and any associated results and graphs

c. This report can be emailed to any account you choose

Grip Tests

See below for full explanation of Grip Tests

Support

① Activity Purpose: Quick guide to the purpose of our current activities

② GripAble Device: This leads to a menu
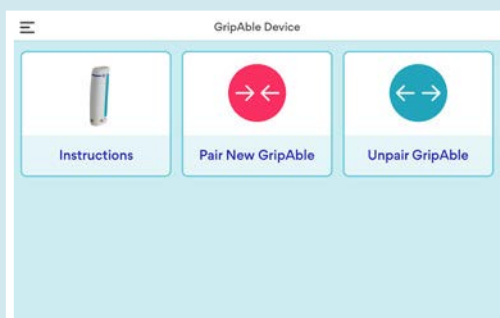
a. Instructions – diagram showing all the parts of the device

b. Pair New GripAble

c. Unpair GripAble

MAIN MENU —
APP NAVIGATION

Support

③ FAQs

④ Your Profile: a summary of the users' personal settings

⑤ Terms & Conditions

⑥ Contact Us

Log Out

Log out to enable others to log in and register new users

SWITCHING GRIPABLE OFF

To preserve the battery it is vital that when the activity session has been completed, the app is swiped away on the tablet otherwise the app is constantly searching for the device and the device battery will drain quickly. See online video if further instructions are needed.

INITIAL SET UP INSTRUCTIONS FOR USER

1 Sit the user in an upright position - ideally in a comfortable and supportive chair.

2 Place the tablet on a tabletop or on a tablet stand in front of the user. It is important (for Bluetooth functionality) for the tablet to be facing the user.

3 Turn on the Tablet. Click into the GripAble app on the screen.

Ensure GripAble is in the unlocked isotonic mode (where the front fingerplate moves as GripAble is squeezed).

4 **Turn on GripAble:**

GripAble is turned on by squeezing the fingerplate on the device for three seconds. The device will vibrate and the blue light will come on when you have correctly turned it on.

Make sure the device and tablet are sufficiently charged.

GripAble shows its connective status via the blue LED light at the top end of the device. If this light is off, the device is asleep. When flashing blue, it is in pairing mode to allow you to connect the GripAble App. When solid blue, the connection is established.

Connection indicator
- Off: Device is asleep
- Blue (flashing): Pairing mode, device is ready to connect
- Blue (solid): Connection established

GripAble shows its battery status via the LED light at the base of the device. This light will display when in pairing mode.

- Red: Battery is critically low
- Yellow: Battery is low
- Green: Battery is okay

Battery indicator (Charging LED)
- Orange: Battery is charging
- Green: Battery is fully charged, remove charging cable

5 If it is your first time using GripAble, you will need to create a GripAble account using an email address and password. The GripAble app will prompt you to do this when you first open it. You will be then sent a verification email to the email address you provided. You must verify your email address before you go further. After this, set up as a new user by navigating to "Add User". Follow the process described below to set your baseline measurements for your activities.

Only use this profile for the patient's affected side (hand/arm). If you wish to swap hands or if a relative/friend/carer wishes to use GripAble, please use the DEMO USER profiles. Please select DEMO USER right or DEMO USER left.

If you have a patient needing bilateral training, currently they will need to set up two separate profiles. This will require a single use of a second mobile phone number (or use the skip option).

The mobile phone number is only used at the initial set up and and if you want to log in on a new tablet as part of a two factor authenticafication method. If setting up dual profiles, ensure you add "left" and "right" for ease of identification and ensure the patient logs into the correct account for the hand to be trained.

Returning Users: select the correct profile by navigating through the carousel. The user will need to enter their PIN number.

6 Pick a movement (grip/release, wrist extension/flexion, pronation/supination or wrist radial/ulnar deviation) to train. Only the activities with this movement as the primary movement will be displayed and this movement will be remembered for the next training session. If a movement has not been selected (first time), when you enter the activity carousel, all activities will be displayed. Pick an activity from the carousel and begin training. Use clinical reasoning to select therapeutic activities for each user.

7 When you wish to change the movement being trained, click "Change movement" in the bottom right of the activities page.

8 When training has finished remember to shut down the GripAble App. Swipe up on the bottom of your tablet screen (on the icon) and swipe the GripAble App closed. This will automatically disconnect the GripAble device which will go into sleep mode after one minute and deep sleep after ten minutes.

9 Plug in GripAble and the tablet to charge when charging is required. Both the tablet and GripAble device are supplied with power cables which connect into a USB plug. The GripAble device charger can be managed with one hand using the magnetic connector.
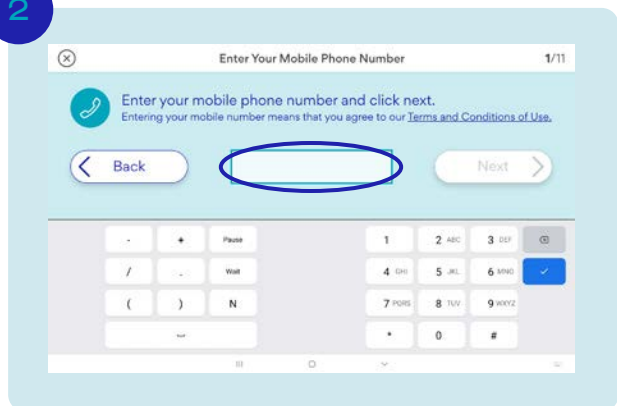
NEW USER SET UP

1

Select "Add User" from the carousel

2

Enter the mobile phone number of the user (therapists - never use your own number). Use the correct country code (e.g. +44). Click "Next".

If the user wishes to review the terms of use, they can read them here. Entering the mobile number ensures a unique identifier so the data for each user is never mistaken for another.

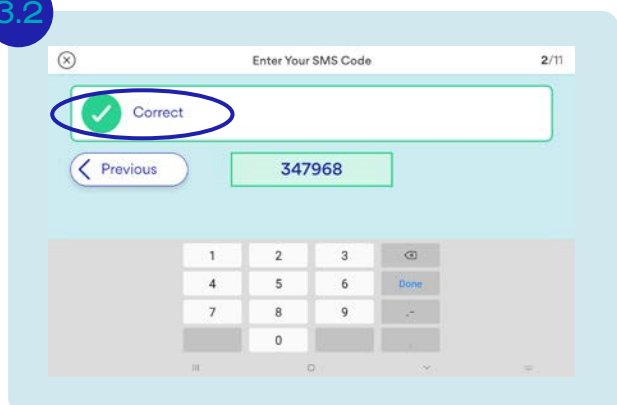This stage can be skipped but it is not recommended.

If your user requires training for their right and left hands, they will need to build themselves as two user profiles and use a second mobile phone number at this stage (or use the mobile number of a friend or relative).

3.1
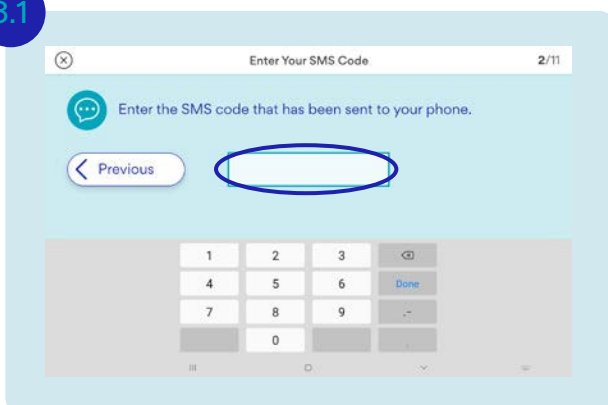
When the mobile phone number is used, an SMS (text) six digit code will be sent to the mobile phone for verification. Enter this six digit code here.
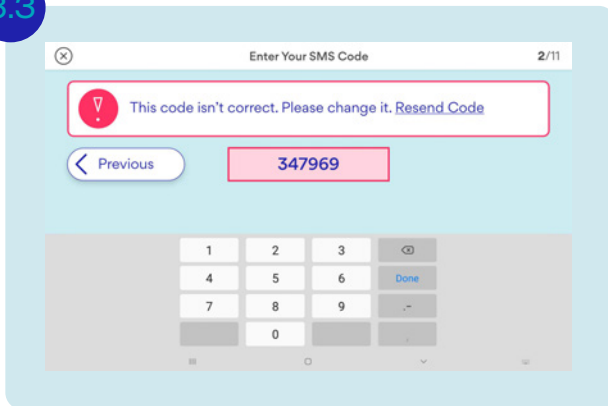
3.2

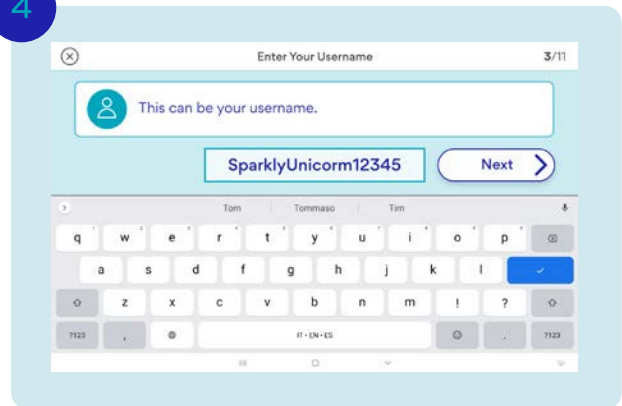GripAble will confirm to you that this number code is correct.

NEW USER
SET UP

3.3

Enter Your SMS Code   2/11

⚠ This code isn't correct. Please change it. Resend Code

‹ Previous   347969

```
1   2   3   ⌫
4   5   6   Done
7   8   9   .-
    0
```

Or not...

4

Enter Your Username   3/11
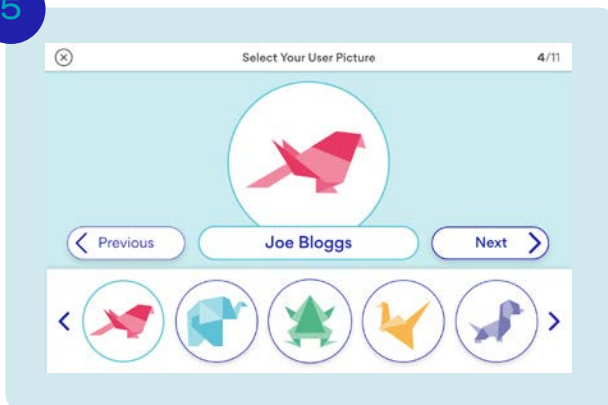
This can be your username.

SparklyUnicorm12345   Next ›

Enter a unique "username". This needs to be easily remembered but does not need to be your actual name. Such as "Super Sarah" or "Fred A Left".
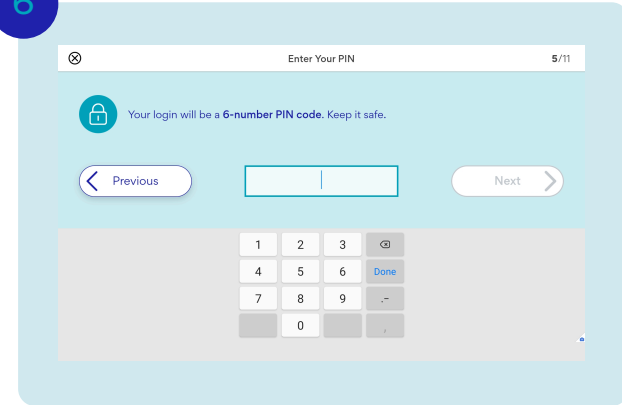
If you are training both left and right hands or grip and pinch, set up two user profiles with clear indication in the name as to which is which.

5

Select Your User Picture   4/11

‹ Previous   Joe Bloggs   Next ›

Select a user image from the origami emojis

6

Enter Your PIN   5/11

Your login will be a **6-number PIN code**. Keep it safe.

‹ Previous   Next ›

```
1   2   3   ⌫
4   5   6   Done
7   8   9   .-
    0
```

To keep your account safe, use a unique six number pin that you can remember for when you log into your account.

NEW USER SET UP

Add your personal information:

• Select gender
• Input date of birth
• Select the hand to be trained
• Select your dominant hand

Select all the diagnostic groups that apply. There are three pages of conditions to scroll through, namely:

• neurological
• musculo-skeletal
• miscellaneous

There is an "other" option on each page where you can enter other diagnoses.

NEW USER SET UP

10

Set a reminder period. This will automatically give a pop up to the user when this period is up and remind the user to recalibrate. Set this according to the speed of change you are expecting for each user individually

Now perform a baseline assessment to record strength and range of movement of the user. This calibrates GripAble to the ability of the user. Ideally assess all four categories to enable the user to use all the activities:

• Grip and release
• Wrist extension and flexion
• Pronation and supination
• Radial and ulnar deviation

Follow the instructions to complete this calibration. Remember to aim for the advised posture (see above). At the end of the process the results will be displayed and will be saved under the users' profile. These categories can be reassessed at any point. You can also skip any that your user is unable to perform. Remember that not assessing all four categories will restrict the number of activities available..

Any time you or your user wishes to reassess, head to the "Assessment" tab and follow the instructions. Again, any of the categories can be skipped.

11

Your setup is now complete, and a summary chart is displayed. Click on anything that you need to change or re- enter. You will now be taken to the Activity Carousel.

GRIPABLE ACTIVITIES

Each activity is designed to allow the therapist to address different therapeutic goals and utilise different combinations of grip, release and movement. The following chart summarises which movement can be trained by which activity. All activities require good vision and a level of attention, cognition and perception although this differs activity to activity. The level of grip strength, release and movement required to perform each activity will be calibrated individually to each user's ability, based on their current assessment measures. Each user will be prompted to update their assessment according to their reminder period but can additionally update it whenever they wish.

Software updates will deliver extensions to existing activities and new activities to your App.

ACTIVITY	Grip & release	Wrist extension & flexion	Wrist radial & ulnar deviation	Pronation & supination
Balloon Buddies	Primary	Primary	Primary	—
Circus Escape	Primary	—	—	—
Concierge	Primary	Primary	Primary	—
Four in a Row	Primary	—	—	Primary
Little Rocket	—	—	—	Primary
Plume	Primary	Primary	Primary	—
Pigeon Hunter	Primary	—	—	—
Rep Counter	Primary	Primary	Primary	Primary
Space Shooter	Additional	—	—	Primary
Pixelate	Primary	—	—	—
Pufferfish	Additional	Primary	Primary	—
Winowsill	Primary	—	—	Primary

● Primary function   ● Additional function

Full descriptions of each of these activities, their therapeutic application, therapeutic goals, levels and setting alterations can be found in the Activity Guide.

GRIP TEST MENU

There are six grip assessments available on the Grip Tests menu which can be found when logged out of the user and by clicking into the menu from the top left corner. You will click on Grip Tests and then on the relevant user name.
All current users will be displayed. Select the correct user. No PIN is required.

Make a choice between:
- Quick Grip Test (see earlier)
- Single Maximum Grip Test
- Multi-positional Grip (GRIT) Test
- Endurance Grip Test
- Sustained Grip Test
- Rapid Exchange Test

GripAble enables the therapist to carry out both isometric and isotonic assessment of grip strength. The isometric position (achieved by compressing the finger plate then using the lock button at the top of the device) mimics bar two of the Jamar® and other comparative dynamometers. It is most common for grip to be assessed in isometric mode.

The software will guide the therapist through the grip strength assessment process.
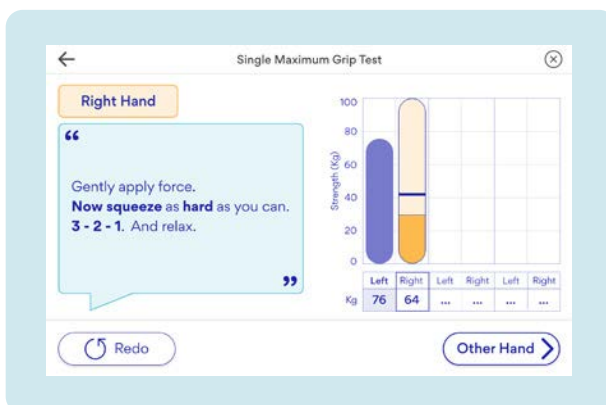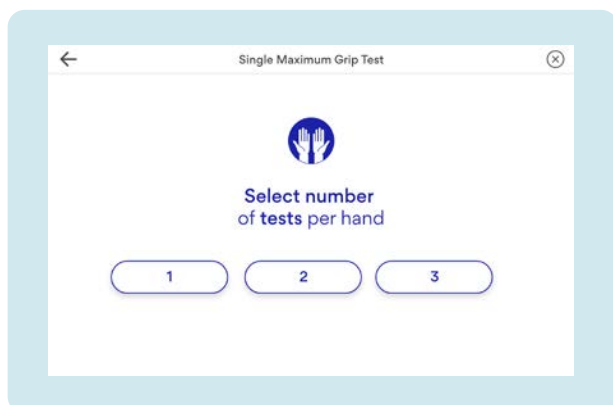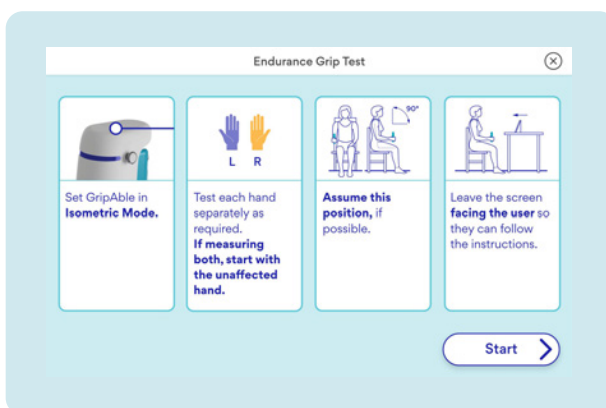
Quick Grip Test

- Set GripAble in isometric mode
- Follow the instructions for positioning and alternating between hands
- Turn the screen away from the user
- Write down the result (as it is not retained in the app)
- Hand GripAble to the other hand to test again and click "Restart"
- Should you wish to see the result in pounds and kilograms, press the circle with the result displayed and this will be shown. Do this before you press "restart"
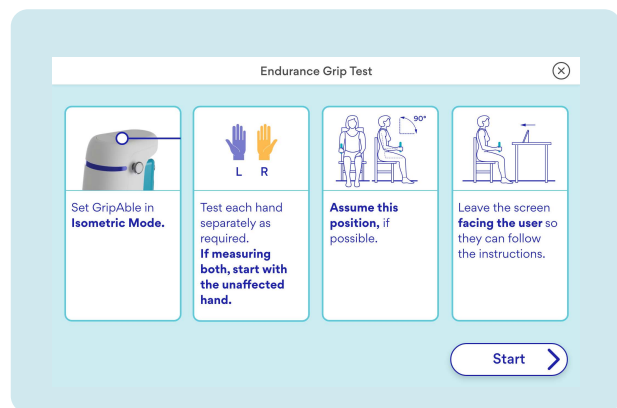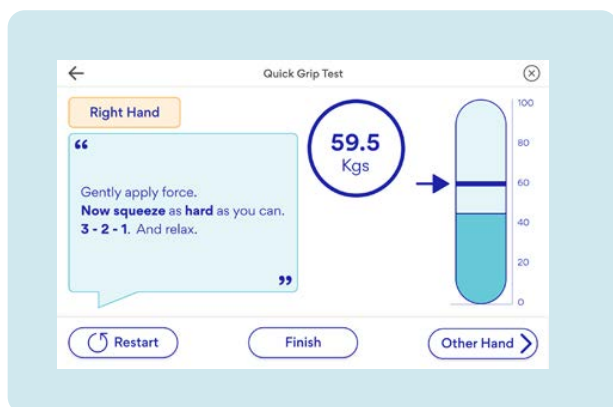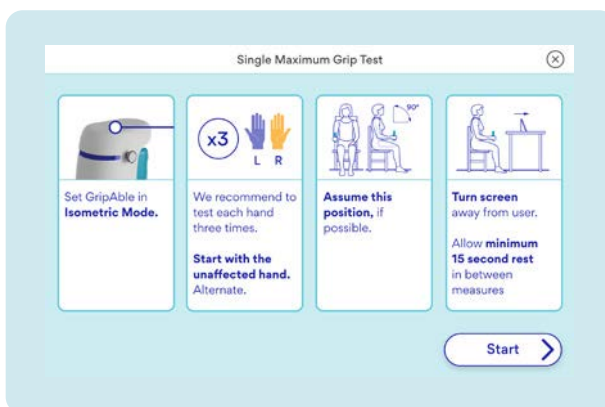
Single Maximum Grip Test

- Set GripAble in isometric mode
- Follow the instructions for positioning and alternating between hands
- Turn the screen away from the user
- Select the number of tests per hand and the starting hand
- Follow the narration as the instruction to your patient
- Click on "Other Hand" when ready to move on
- When each of the tests is complete click "Results"
- Results include
    - o Mean
    - o Standard deviation
    - o Comparison
- You can email the results for placement into clinical records

Multi-position Grip Test
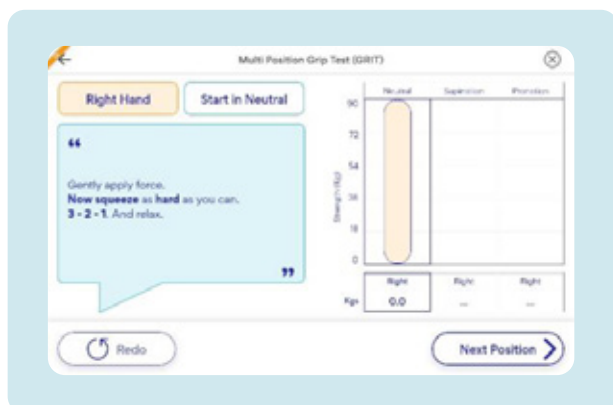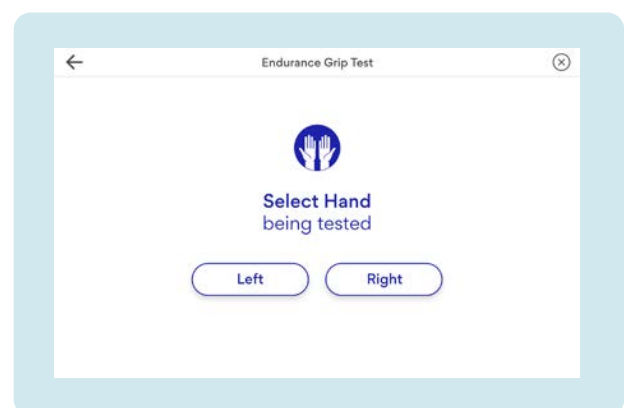
- Set GripAble in isometric mode
- Follow the instructions for positioning
- Turn the screen away from the user
- Select the number of tests per hand, left, right or both
- If measuring both hands, choose the starting hand
- Follow the narration as the instruction to your patient
- Click on "Other Hand" or "Next Position" when ready to move on
- When each of the tests is complete click "Results"
- Results include
  - o Individual results for each position on each hand (on the testing page)
  - o GRIT ratio for each measured hand (on the results page)
- You can email the results for placement into clinical records
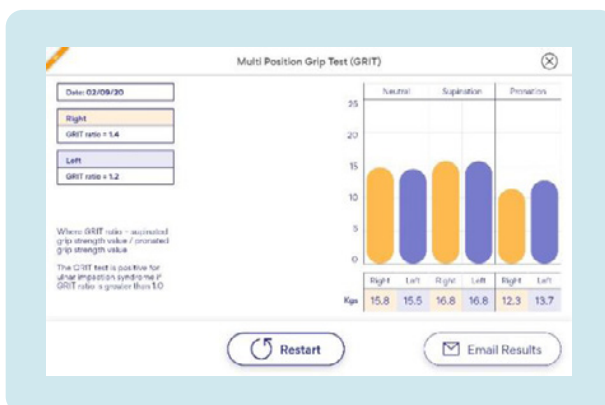
Endurance Grip Test

- Set GripAble in isometric mode
- Follow the instructions for positioning
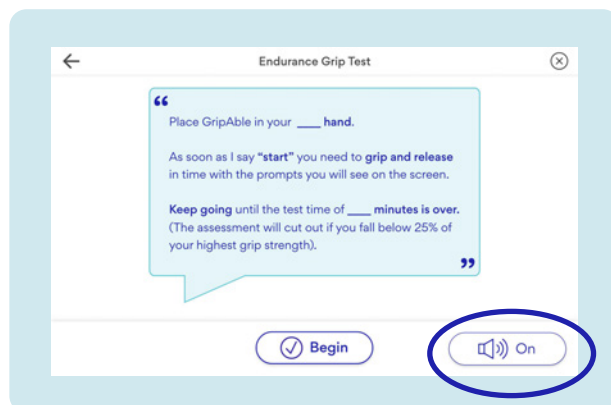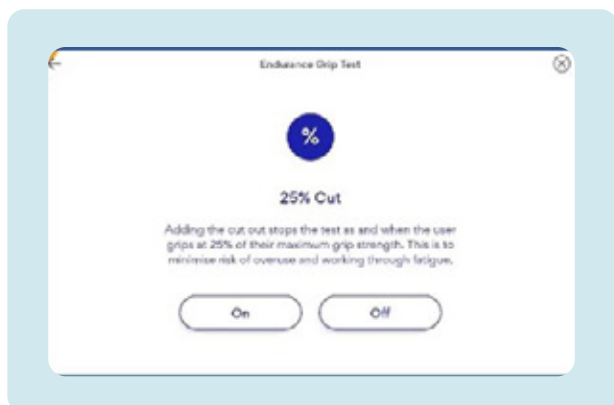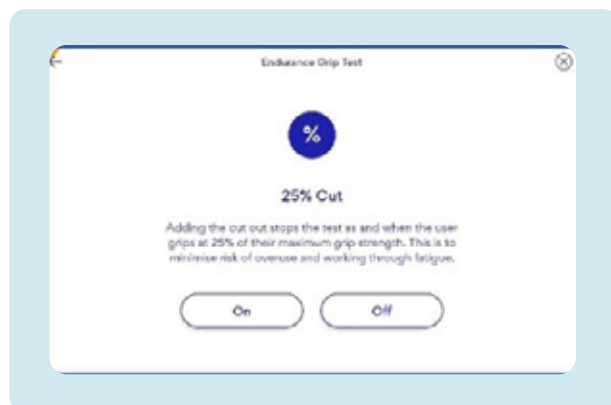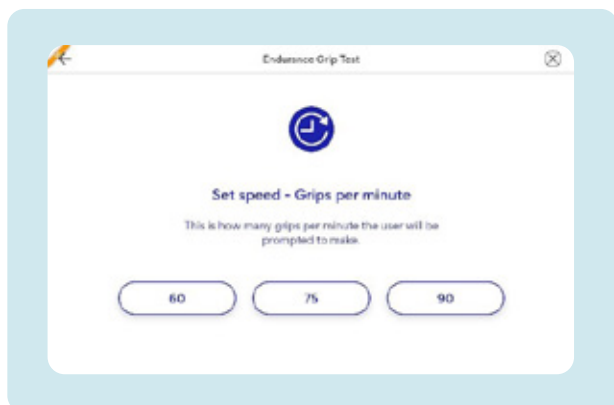- Leave the screen facing the user
- Select the hand being tested, right or left
- Set the time, in minutes, for this test.

    o Always start with a one minute test

- Set the speed, in grips per minute.

    o The most commonly used in the literature is 60 per minute therefore this is recommended. The other times are used in some studies.

- Decide whether you want the 25% cut off active or not. Enabling this cut off, ensures that the user does not work past a reasonable level of fatigue. It is recommended that you activate this.

- Follow the narration as the instruction to your patient

- Click on Begin when ready. The test will count down until the start and then the user needs to grip and release straight away. Do not worry if this takes a practice – just restart and try again. There is an auditory and a visual cue for the timing. Follow whichever works best for your user.

- When the test is complete click "Results"

- Results include

    o Maximum strength
    o Mean strength
    o Time to hit 25% (if activated)
    o Speed used
    o Duration of the test

- You can email the results for placement into clinical records

Set speed - Grips per minute

This is how many grips per minute the user will be prompted to make.

| 60 | 75 | 90 |

25% Cut

Adding the cut out stops the test as and when the user grips at 25% of their maximum grip strength. This is to minimise risk of overuse and working through fatigue.

| On | Off |

25% Cut

Adding the cut out stops the test as and when the user grips at 25% of their maximum grip strength. This is to minimise risk of overuse and working through fatigue.

| On | Off |

Endurance Grip Test

Place GripAble in your ____ hand.

As soon as I say "start" you need to grip and release in time with the prompts you will see on the screen.

Keep going until the test time of ____ minutes is over. (The assessment will cut out if you fall below 25% of your highest grip strength).

Begin   On

Endurance Grip Test

Grip   Release

Restart   Progress

Endurance Grip Test

Restart   Email Results

Sustained Grip Test

This test enables you to track the performance of grip over a more functional length of time (from 5 – 10 seconds). Potentially useful for all users who are working on endurance of their grip, increased functional independence and management of pain.

- Set GripAble in isometric mode
- Follow the instructions for positioning
- Leave the screen facing the user
- Select the time for the single sustained grip (from 5 to 10 seconds)
- Follow the narration as the instruction to your patient
- Click on Begin when ready. The test will only start when the device detects the beginning of the squeeze
- When the test is complete click "Results"
- Results include
    - o Maximum strength
    - o Mean strength
    - o Time to peak
    - o Space under curve
- You can email the results for placement into clinical records
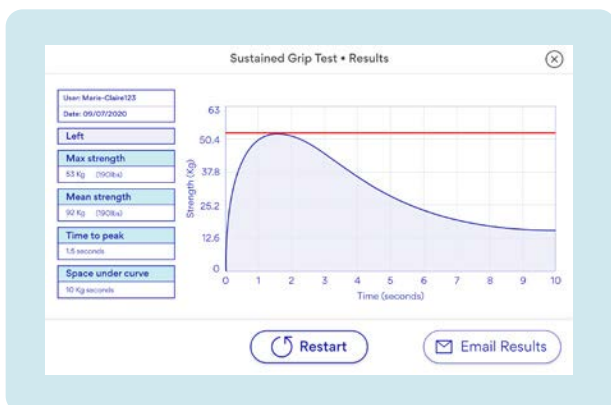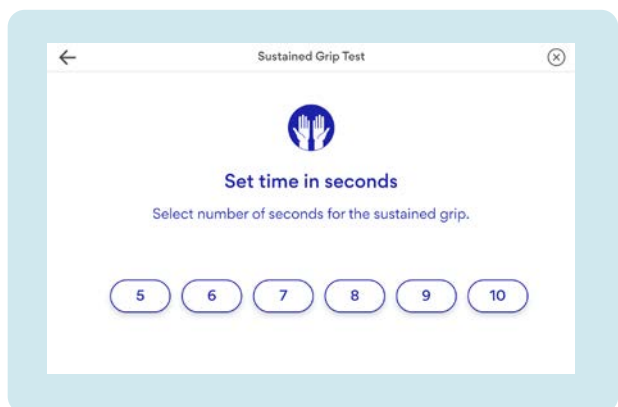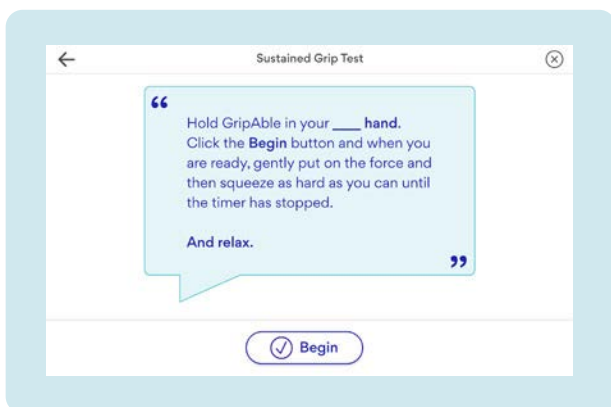
Rapid Exchange Grip Test

- Set GripAble in isometric mode
- Follow the instructions for positioning
- Leave the screen facing the user
- Ensure GripAble is held in the midline position as per instructions and picture
- Choose the starting hand
- Follow the narration as the instruction to your patient
- You can choose to enable or disable the sound
- Click on Begin when ready. The test will count down five seconds and then start
- When the test is complete click "Results"
- Results include

    o Maximum strength for each side
    o Mean strength for each side
    o Standard deviation for each side
    o Comparison right to left

- You can email the results for placement into clinical records
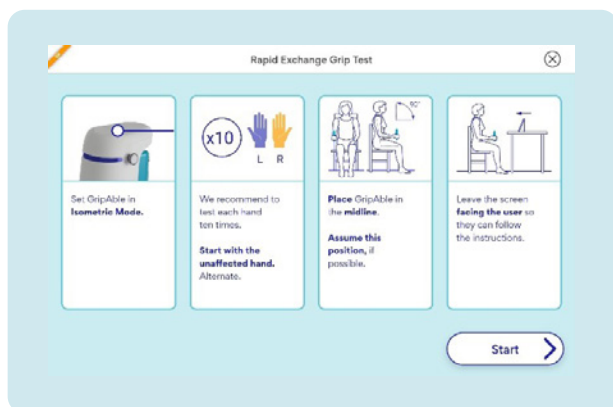
EXTRA HELP

There are numerous "GripAble Explained" videos available on the GripAble YouTube channel which explain many of the processes above. Follow this link to watch them.

https://m.youtube.com/c/gripable

- Unboxing and setting up your GripAble
- Get to know the GripAble app
- Get to know your tablet
- New user set up
- Charging your GripAble
- How to use the straps
- Quick Grip Test
- Setting goals
- How to track your achievements
- GripAble activities
- Achievement history
- How to turn on and off your GripAble

FAQS AND TROUBLESHOOTING

1. My device is not connecting to the tablet

   a) Turn on GripAble device

   b) Turn on tablet

   c) On the home screen of the tablet, drag the top of the screen down to reveal the toolbar and the Bluetooth icon > click the Bluetooth icon to open up the Bluetooth manager (or go through Settings to Bluetooth manager)

   d) Turn on and off the Bluetooth adaptor

   e) There will be a list of all Bluetooth devices that the tablet is picking up, give it 5-10 seconds, you may not recognise the codes, just allow it to scan without clicking anything.

   f) After this come out of the Bluetooth manager and go to the GripAble icon, the device should now connect

   g) If it is connected the GripAble device will vibrate when it has connected. To double check this, go onto the Menu tab and select "Device", if it says "Disconnected" in a yellow box, the GripAble device has connected. If it still says "Connect" in a grey box, the GripAble device has not connected. Please press the "Connect" box if this is the case, the GripAble device should vibrate if it connects and the box will turn yellow with "Disconnect" written in it.

   h) If this still does not work, please turn off the tablet and GripAble device and repeat these steps.

2. How does my GripAble turn off?

   ### Turning off while connected

   a) With the device connected indicated by a solid blue light, put the app into the background by (1) minimising the app or opening a new app, (2) turning the screen off i.e. pressing power button once, or (3) closing the tablet lid.

   b) After 15 seconds, your GripAble device will go to standby (the blue light will turn off).

   c) At this point, the device can be woken using the usual "squeeze to start" and will automatically reconnect i.e. solid blue light. If left for 15 seconds it will automatically disconnect again

   d) After ~10 minutes, your GripAble device will go to sleep and will require the usual "squeeze to start"

   e) It is best to place the device upright when performing this process

Turning off by unpairing

a) When you swipe away the GripAble App, the GripAble device will automatically go into pairing mode (to enable you to reconnect easily). This is indicated by the blue flashing light.

b) After three minutes, your GripAble device will go to standby (the blue light will turn off). At this point, the device can be woken up by movement

c) After ~10 minutes, your GripAble device will go to sleep and will require the usual "squeeze to start"

d) It is best to place the device upright when performing this process

③ How do I reset the device?

a) Put the device into advertising mode (blue light flashing) – swipe away the GripAble App if necessary

b) Press the locking button 3 or more times within a 5 sec period – device will reset and vibrate

c) It is best to press the button halfway down and not too quickly I.e. once per second

④ Sending an email doesn't work

a) Please check your wifi

b) If you are working in an institution (such as the NHS) please ensure you are on the staff wifi rather than a public one. Public ones often block the sending of emails

c) If you are still having problems sending an email, please check with your IT department that the internal wifi doesn't have any restrictions that might be blocking it

⑤ I get stuck on the screen saying "Squeeze your GripAble to turn it on"

a) Click on the button "troubleshoot"

b) This will reset your Bluetooth and then the connection will work

⑥ **My WiFi is unstable**

 a) Your interaction on GripAble should no longer be affected by a temporary loss of WiFi

 b) Version 2.3.0 of the software has additional functionality meaning that should your WiFi dip or go down in the middle of your training session or using the assessments, as soon as the WiFi is back on, your activity will still be recorded.

 c) To move between users will require WiFi

⑦ **Some of my daily activity doesn't register on my daily reps of minutes**

 a) If you complete an activity in under 30 seconds (such as Pixelate level 1) this will not register.

 b) An activity needs to last more than 30 seconds for it to add to your minutes counter

⑧ **What if I want to assess strength in both hands?**

 a) When doing the "Quick Grip test" the user selects which hand they are testing and therefore assessment of both hands is possible.

 b) When using the "Single Maximum Grip Test" you can set the test to left, right or both hands

⑨ **What if I want to train left and right?**

 a) Currently, patients requiring bilateral training will need to set up two profiles

 b) Name the profiles with "left" or "right" at the end for ease of use

 c) Two mobile numbers are recommended for two profiles to be set up

 d) The user should use their own mobile number for one hand and a family members number for the other hand - therapists should never use their own mobile number

⑩ **What if my user does not have a mobile phone?**

 a) We recommend that all users are registered using a mobile phone number. This means they will be able to log in to their account from a different tablet

 b) Any user who wishes to bypass this process can do so by pressing the "Skip" button

 c) Should a user not have a mobile number, that of a family member can be used as an alternative but they will need to be on-hand to read out the six digit code sent to their mobile phone

 d) No therapist should use their own mobile number for a user (other than themselves)

 e) Future versions will have the ability to swap an e-mail address for mobile number

11) **What if the mobile number is not a UK number?**

    a) Any mobile number will work. Ensure you input the + and country code correctly

12) **What if I wanted to train individual fingers or specific pinch grips?**

    a) We have a device called PinchAble that is placed on the GripAble and allows the patient to pinch and release with their fingers. This is currently going through a "proof of concept" process and will be more widely available in 2021

    b) The fingerplate can also be controlled using a pinch grip. GripAble will be best rested on a table for this. In 2021, we will have StAble, a stand for GripAble to sit into, available for purchase

13) **What if the tablet gets lost or stolen?**

    a) You are responsible for your tablet. If you are keeping it in a department. you need to ensure it is on the asset list and insured within your department.

14) **What if the cables get lost or stolen?**

    a) If the cable for GripAble gets lost, please contact us. If the USB-C cable for the tablet is lost, this is available commercially so you can replace it easily.

15) **Is there any lycra or latex in the product?**

    a) No. The white straps are made of silicone and the black lanyard strap is nylon.

16) **How long does GripAble take to charge?**

    a) A full charge should take approximately 1.5 hours. However, it is sensible to charge overnight. It is not possible to over charge GripAble as it has an automatic cut out feature (similar to mobile phones).

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